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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,459	08/20/2001	Seung June Yi	HI-035A	3386
34610	7590	05/08/2006	EXAMINER PHAN, TRI H	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			ART UNIT 2616	PAPER NUMBER

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/932,459

Applicant(s)

YI ET AL.

Examiner

Tri H. Phan

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11,30-39,41-52,54 and 55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11, 30-39, 41-52 and 54-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment/Arguments*

1. This Office Action is in response to the Response/Amendment filed on March 1<sup>st</sup>, 2006. Claims 1-10, 12-29, 40 and 53 are now canceled. Claims 11, 30-39, 41-52 and 54-55 are now pending in the application. In view of the following new grounds of rejection, the previous final Office action has been withdrawn. Delay in prosecution of this application is regretted.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 11, 30-39, 41-52 and 54-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over **ETSI TS 125 322 v.3.1.2 (2000-01)** ([“Universal Mobile Telecommunications System (UMTS); RLC Protocol Specification (3G TS 25.322 version 3.1.2 Release 1999 (XP-002168713))”]; hereinafter the “**TS 125 322 v.3.1.2**” reference).

- In regard to claim 11, **TS 125 322 v.3.1.2** discloses about the *method for inserting a protocol data unit ‘PDU’, a length indicator (‘LI’) in a radio link control ‘RLC’ layer of a radio communication system* (for example see figures 4.1-4.4, page 9, section 4.2.1: ‘Model of RCL’

Art Unit: 2616

through page 14, section 4.2.1.3: 'Acknowledge mode entity'; wherein the length indicators, e.g. *"first length indicator"*, are inserted into the beginning of each PU, e.g. 'PDU', as specified in page 13, second paragraph), *which comprises detecting that a last segment of a service data unit 'SDU' ends at the end of a previous PDU* (for example see section 9.2.2.8: Length Indicator 'LI', pages 23-24; wherein the value LI= "0" indicates that the end of last segment of the SDU ends at the end of the last PDU as specified in page 23, first and fourth paragraph); *checking whether the previous PDU has a first length indicator ('LI') indicating the end of the last segment of the SDU* (for example see section 11.3.2.1: AMD PDU contents to set, page 41, fourth paragraph); *and inserting in the current PDU a second length indicator indicating that the last segment of the SDU ends at the end of the previous PDU according to the checking result only if the previous PDU does not have the first indicator* (for example see section 9.2.2.8: Length Indicator 'LI', pages 23-24; section 11.2.2.1: UMD PDU contents to set, page 39; section 11.3.2.1: AMD PDU contents to set, page 41; wherein the LI(s) is/are inserted into the PDU as disclosed in section 9.2.2.8: Length Indicator 'LI', page 23, first paragraph; and whenever the PDU filled with the last segment of a SDU and there is no room for a LI, the value of LI field is set to only "0", e.g. *"second length indicator"*, in the next PDU, e.g. *"inserting in the current PDU a second length indicator indicating ... according to the checking result only if the previous PDU does not have the first indicator"*, as disclosed in section 9.2.2.8: Length Indicator, page 23, fourth paragraph; section 11.2.2.1: UMD PDU contents to set, page 39, third paragraph). Though, TS 125 322 v.3.1.2 does not use words such as *"detecting"* or *"checking"*, however, in order to insert the LI into the PDU, the UM/AM entity has to *"detect"* and *"check"* for enough room to insert the LI into the PDU or the next PDU as specified in section 11.3.2.1: AMD PDU contents to set,

Art Unit: 2616

page 41, fourth paragraph; e.g. “*detecting*” that a last segment of a service data unit ‘SDU’ ends at the end of a previous PDU and “*checking*” whether the previous PDU has a first length indicator indicating the end of the last segment of the SDU as claimed in the claim invention.

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to disclose the method as “*detecting*” and “*checking*” into the UM/AM entity method as taught by the TS 125 322 v.3.1.2, with the motivation being to provide steps for clarifying there is enough room for inserting the LI of the last segment of the SDU into the PDU or the next PDU as specified in TS 125 322 v.3.1.2: section 11.3.2.1: AMD PDU contents to set, page 41, fourth paragraph.

- Regarding claims 30 and 43, TS 125 322 v.3.1.2 discloses about the *method and system* (‘mobile communication system’; for example see figure 4.1) *having an upper layer and a lower layer, in which a data received from the upper layer is converted into data units of the lower layer having at least one fixed size* (for example see figures 4.2-4.4; where the SDU from higher layers are segmented and/or concatenated to PUs of fixed length in the UM/AM entity as specified in figures 43-44; section 4.2.1.3: Acknowledged mode entity, page 13, first paragraph), *the system comprising means for including a last segment of a data unit of the upper layer into a current data unit of the lower layer* (for example see section 9.2.2.8: Length Indicator, pages 23-24; wherein the end of the last segment of the SDU is inserted into the PDU or the next PDU with the indicating value of the LI); *and means* (‘UM/AM entity’ in figures 4.3-4.4) *for including a second indicator (‘LI = 0’) into a following data unit of the lower layer when an end of the last segment of the data unit of the upper layer is included within the current data unit of*

Art Unit: 2616

*the lower layer* (for example see section 11.2.2.1: UMD PDU contents to set, page 39, third paragraph; wherein the LI = 0 is inserted into the next PDU if there is no room for inserting the LI field for the last segment SDU into the current PDU) *and a first indicator* ('LI'; for example see section 9.2.2.8: Length Indicator 'LI', pages 23-24; where the LI(s) is/are inserted into the PDU for indicating the number of octets of an end of an SDU segment) *indicating the end of the last segment of the data unit of the upper layer is not included within the current data unit of the lower layer, wherein the second indicator indicates that the end of the last segment of the data unit of the upper layer is included within the current data unit of the lower layer* (for example see section 11.2.2.1: UMD PDU contents to set, page 39, third paragraph; section 11.3.2.1: AMD PDU contents to set, page 41, fourth paragraph; wherein the LI = '0', e.g. "*second indicator*", is inserted into the next PDU if there is no room for inserting the LI field for the last segment SDU into the current PDU, e.g. "*first indicator ... is not included within the current data unit of the lower layer*").

Thus, **TS 125 322 v.3.1.2** does not define "*first indicator*" and "*second indicator*"; however, it is obvious to the person of ordinary skill in the art at the time of the invention was made to define the different LIs between the current/next PDUs such as the LIs as the "*first indicator*" for inserting into the PDU to indicate the number of octets of an end of an SDU segment as disclosed in section 9.2.2.8: Length Indicator 'LI', page 23, first paragraph; and the LI = '0' inserting into the next PDU as the "*second indicator*" for clarifying the different between LI inserting into the current PDU as disclosed in **TS 125 322 v.3.1.2**: section 11.3.2.1: AMD PDU contents to set, page 41, fourth paragraph.

- In regard to claims 31 and 44, **TS 125 322 v.3.1.2** further discloses, *wherein the data unit of the upper layer is a service data unit 'SDU'* (For example see figures 4.2-4.4; page 11, Section 4.2.1.1: Transparent mode entities through page 14, Section 4.2.1.3: Acknowledge mode entity; wherein the SDUs from the higher layer receive through the Tr-SAP, UM-SAP, or AM-SAP).

- Regarding claims 32 and 45, **TS 125 322 v.3.1.2** further discloses, *wherein the first indicator is to indicate the last octet of each service data unit 'SDU' ending within the current data unit of the lower layer* (for example see **TS 125 322 v.3.1.2**: page 23, Section 9.2.2.8 Length Indicator 'LI'; wherein the LI is used to indicate the last octet of each SDU)

- In regard to claims 33 and 46, **TS 125 322 v.3.1.2** further discloses, *wherein the second indicator is a length indicator ('LI') indicating that the end of the last segment of the data unit 'SDU' within the current data unit of the lower layer includes the end part of the data unit] of the upper layer ends at an end of the current data unit of the lower layer* (for example see section 11.2.2.1: UMD PDU contents to set, page 39, third paragraph; section 11.3.2.1: AMD PDU contents to set, page 41, fourth paragraph; wherein the LI = '0', e.g. "second indicator", is inserted into the next PDU if there is no room for inserting the LI field for the last segment SDU into the current PDU).

- Regarding claims 34 and 47, **TS 125 322 v.3.1.2** further discloses, *wherein the current data unit of the lower layer and the following data unit of the lower layer are a protocol data*

*unit 'PDU' respectively (for example see TS 125 322 v.3.1.2: pages 11-12, section 4.2.1.1:*

Transparent mode entities through page 14, section 4.2.1.3: Acknowledge mode entity; wherein the SDUs from higher layer are segmented into PDUs in the UM/AM entity as specified in figures 4.2-4.4).

- In regard to claims 35-36 and 48-49, **TS 125 322 v.3.1.2** further discloses, *wherein the protocol data unit 'PDU' is an unacknowledged mode 'UMD' protocol data unit 'PDU' (for example see figure 4.3 section 4.2.1.2: Unacknowledge mode entity, pages 11-12) or an acknowledged mode 'AMD' protocol data unit 'PDU' (for example see figure 4.4 section 4.2.1.3: Acknowledge mode entity, pages 12-14) and wherein the lower layer is a radio link control 'RLC' layer ('radio link control layer'; for example see TS 125 322 v.3.1.2: figures 4.1-4.4, page 9, Section 4.2.1: Model of RCL).*

- Regarding claims 37-38 and 50-51, **TS 125 322 v.3.1.2** further discloses, *wherein the first indicator is a length indicator ('LI') indicating the end of the data unit of the upper layer within the data unit of the lower layer (for example see TS 125 322 v.3.1.2: pages 23-24, Section 9.2.2.8: Length Indicator 'LI'; where the Length Indicator which indicates the end of the SDU occurs in the PDU) and wherein the second indicator is predefined as "0" (for example see section 11.2.2.1: UMD PDU contents to set, page 39, third paragraph; section 11.3.2.1: AMD PDU contents to set, page 41, fourth paragraph; wherein the LI = '0', e.g. "second indicator", is inserted into the next PDU if there is no room for inserting the LI field for the last segment SDU into the current PDU).*



- Regarding claims 39 and 52, **TS 125 322 v.3.1.2** further discloses, *wherein the second indicator is placed as the first length indicator in the following data unit of the lower layer* (for example see **TS 125 322 v.3.1.2**: pages 23-24, Section 9.2.2.8: Length Indicator 'LI', page 23; wherein the LI = 0 is inserting into the first LI in the next PDU as specified in the fourth and fifth paragraphs).

- In regard to claims 41 and 54, **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about *padding the remained portion of the current data unit of the lower layer after including the last segment of the data unit of the upper layer* (for example see **TS 125 322 v.3.1.2**: page 24, section 9.2.2.8: Length Indicator 'LI' through section 9.2.2.10: Padding 'PAD') *and including the predefined third indicator into the current data unit of the lower layer, wherein the predefined third indicator includes padding information* (for example see **TS 125 322 v.3.1.2**: pages 23-24, Section 9.2.2.8: Length Indicator 'LI'; wherein the padding Length Indicator is placed after any length indicator for a PU as specified in page 23, sixth paragraph and the value is defined as in the table) *with respect to the padded portion*.

- Regarding claims 42 and 55, **TS 125 322 v.3.1.2** further discloses, *wherein each of the current data unit of the lower layer and the following data unit of the lower layer comprises, a header portion having a data sequence number* (for example see **TS 125 322 v.3.1.2**: page 22, section 9.2.2.3: Sequence Number 'SN'), *an indicator portion indicating lengths related to the data unit of the upper layer* (**TS 125 322 v.3.1.2**: page 24, section 9.2.2.8: Length Indicator 'LI'),

*and a data portion including the data unit of the upper layer (for example see TS 125 322 v.3.1.2: page 24, section 9.2.2.9: Data).*

***Response to Amendment/Arguments***

4. Applicant's arguments filed on March 1<sup>st</sup>, 2006 with respect to claims 11, 30 and 43 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

5. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

Art Unit: 2616

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on (571) 272-3179.

**Any response to this action should be mailed to:**

**Commissioner of Patents and Trademarks**

Washington, D.C. 20231

**or faxed to:**

**(571) 273-8300**


Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tri H. Phan  
May 2, 2006



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